

Amendments to the Specification:

Please add the following new heading and paragraph on page 1 after the title of the invention and before the heading "Background of the Invention":

Cross-Reference to Related Application

This application claims priority from U.S. Provisional Patent Application Serial No. 60/252,463 filed on 22nd November, 2000.

Please replace the paragraph beginning on page 1, line 5 and ending on page 1, line 14, with the following amended paragraph:

With the current "wave" of the commercialization of Internet usage, and the increasing usage of multimedia applications, the traffic demand is seen as a phenomenon which ~~is~~ is exploding today. The response from the wired world is the emergence of Dense Wavelength Division Multiplexing (DWDM) technology, which can increase link throughput by one magnitude or more. That response leaves the last mile especially the wireless link as a potential bottleneck. As a consequence, the task of searching for a method for increasing the wireless link and its related network capacity is urgent.

Please replace the paragraph beginning on page 4, line 18 and ending on page 4, line 23, with the following amended paragraph:

For example, for the rain region K, to achieve a ~~reasonable~~ reasonably high availability of 99.99% around the year for the horizontal polarized frequency of 43.5 GHz the radio will need a

28 dB link margin [ETSI BRAN#20 contribution BRAN20d028 by Paolo Agabio]. This issue is one of the key problems encountered in the design of such a communication system.

Please replace the paragraph beginning on page 5, line 8 and ending on page 5, line 23, with the following amended paragraph:

In one embodiment, the capacity of the communication channel may be increased in response to the level of received data for wireless transmission. The power level of the communication may also be increased to facilitate transmission at the higher capacity. Advantageously, this enables congestion or potential congestion at the transmitter to be alleviated and handed over to the receiver side of the network. If the receiver side of the network comprises a base station, for example connected to a public switched network, for example, by a high speed transmission system such as may be provided by an optical fibre based system, the receiver end should be able to handle the additional traffic. This technique may advantageously take advantageous of the additional power available at the power amplifier which is required to compensate for rain ~~faee~~ fade or other attenuation to maintain the communication link in adverse conditions.

Please replace the paragraph beginning on page 5, line 29 and ending on page 6, line 8, with the following amended paragraph:

According to another embodiment of the present invention, the transmitter may be adapted to reduce its power level in response to a low level of incoming data in order to reduce the communication channel's potential to interfere with another communication channel, thereby allowing the other communication channel to increase its capacity throughput to alleviate its own congestion. In one embodiment, the transmitter may transmit ~~and~~ an indication of its ability to lower the power level of its transmission ~~of its transmission~~ signal to a controller which can then

inform other transmitters of this condition so that one or more transmitters may increase the capacity of their transmission channels.

Please replace the paragraph beginning on page 6, line 18 and ending on page 6, line 25, with the following amended paragraph:

According to another aspect of the present invention, there is provided a transmitter for generating and transmitting a wireless communication signal, the transmitter including signal control means for varying the power of the communication signal and ~~limited~~ limiting means for limiting the control means to control the power to reduce or substantially prevent interference by said wireless communication signal of a second wireless communication signal from another transmitter.

Please replace the paragraph beginning on page 7, line 1 and ending on page 7, line 12, with the following amended paragraph:

According to another aspect of the present invention, there is provided a controller for controlling the operation of a ~~ef~~ wireless transmitter in a wireless communication network containing a plurality of wireless transmitters, comprising monitoring means for monitoring interference of a communication channel associated with a wireless transceiver by a wireless signal from another wireless transmitter, signal generating means for generating a signal indicative of interference, and transmitting means for transmitting said interference indicating signal to the transmitter transmitting the wireless signal causing the interference, to control the level of interference.

Please replace the paragraph beginning on page 10, line 8 and ending on page 10, line 23, with the following amended paragraph:

According to another aspect of the present invention, there is provided a communication system comprising a transmitter for generating and transmitting a wireless data transmission signal, a receiver for receiving said wireless data transmission signal from said transmitter, means responsive to the attenuation of said wireless signal, and/or the presence of a potentially attenuating medium in the path of said signal for causing the output level of said wireless transmission signal to be increased when the attenuation reaches a predetermined level and/or the presence of said potentially attenuating medium is detected, detection means for detecting interference of another signal by said wireless transmission signal and control means for reducing the power level of said transmission signal output by said transmitter in response to the detection of said interference above an acceptable level.

Please add the following new paragraphs on page 11, at line 18:

According to another aspect of the present invention, there is provided an apparatus for generating a signal for wireless transmission comprising signal generating means for receiving data and generating a signal containing received data for wireless transmission, and a controller for controlling the data carrying capacity of said signal, based on one or more of (1) a condition of the wireless signal received by a wireless receiver and (2) an indication of a condition in the path of the wireless signal which affects transmission of the wireless signal.

According to another aspect of the present invention, there is provided a fixed-position wireless transmitter for generating a signal for wireless transmission comprising signal generating means for receiving data and generating a signal containing received data for wireless transmission at a frequency at or above 2 GHz which causes said wireless signal to be attenuated by atmospheric precipitation, monitoring means for monitoring the quantity of data supplied to said signal generating means for wireless transmission, and control means for controlling the power of the generated wireless signal within a range reserved to compensate for attenuation by

atmospheric precipitation in response to said monitored quantity of data for wireless transmission.

Please delete the paragraph beginning on page 11, line 18 and ending on page 12, line 2.

Please delete the paragraph beginning on page 12, line 3 and ending on page 12, line 12.

Please delete the paragraph beginning on page 12, line 13 and ending on page 12, line 28.

Please replace the paragraph beginning on page 20, line 5 and ending on page 21, line 7, with the following amended paragraph:

In one mode of operation, according to an embodiment of the present invention, the capacity or data rate of the communication channel is reduced, for example, by reducing the modulation level (i.e. the number of bits per baud) or by increasing the level of error code inserted into the data, or a combination of both. By decreasing the level of modulation, the transmitted symbols or changes in state received at the receiver are more easily resolved, since for example amplitude and phase values are spread further apart, thereby effectively increasing the signal to noise ratio. Similarly, by increasing the proportion of error correction code inserted into the data, the ability of the receiver to correct errors increases, again effectively increasing the signal to noise ratio of the received signal ~~to and~~ enhancing the resiliency of the wireless transmission channel ~~and to~~ adverse conditions. In both cases, although the data rate is necessarily reduced, the ability to accurately receive transmitted data is improved. The power of the output signal may be increased with a decrease in the channel capacity or data rate to improve the availability of the wireless communication link further. Thus, the ability of the transmitter to reduce the capacity or data rate of the communication channel provides an alternative method of

increasing the availability of the communication channel or an additional means of improving the availability of the communication link in combination with increasing the signal strength.

Advantageously, adapting the capacity or data rate of the channel may further increase the availability of the communication channel over that which is possible by increasing the power of the transmission signal alone. Therefore, this method of operation makes it possible to maintain the communication link under more extreme conditions than has been possible in the past and makes it possible to increase the availability of the link. The link capacity or data rate may be reduced in response to any suitable signal, for example a signal based on or indicative of the bit error rate of the signal received by the receiver, or any other signal.